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International application No. PCT/US03/11965

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : HO1G 29/06				
US CL : 315/8,370				
According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED				
Minimum documentation searched (classification system followed by classification symbols)				
U.S. : 315/8,8.10,370;313/413,440;348/820,				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages			Relevant to claim No.
X	US 4,963,789 A (BUHLER) 16 OCTOBER 1990 (16/10/1990), FIG.1-4, COL. 3, LINES 13-67 TO COL.6, LINES 1-13.			1, 3-6, 9-12
Y	US 5,739,638 A (WILBER ET AL) 14 APRIL 1998 (14/04/1998), FIG. 1, COL. 2, LINES 21-67 TO COL. 3, LINES 1-36.			2, 7-8
Y	US 4,388,619 A (BECK) 14 JUNE 1983 (14/06/1983), FIG. 5, COL. 9, LINES 30-67 TO COL. 10, LINES 1-9.			2, 7-8
A	US 5,168,195A (BREIDIGAN ET AL) 01 DECEMBER 1992 (01/12/1992), FIGS. 1-3, COL. 3, LINES 59-67 TO COL. 6, LINES 1-32.			1-12
Further documents are listed in the continuation of Box C. See patent family annex.				
"A" document defining the general state of the art which is not considered		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention		
to be of particular relevance "E" earlier document published on or after the international filing date "X"			document of particular relevance; the claimed invention cannot be	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other		considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance, the claimed invention cannot be		
special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means		"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art		
P document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report		
15 JUNE 2003		0.9 OCT 2003 ''		
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks				
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